

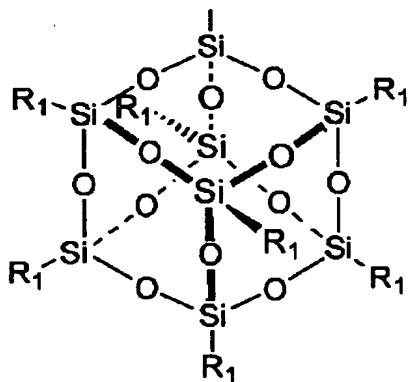
What is claimed is:

1. A positive resist composition comprising:

(A) a resin capable of decomposing under action of an acid and increasing solubility in an alkali developer, and

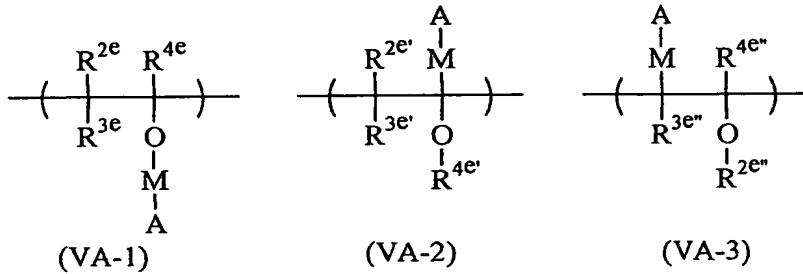
(B) a compound capable of generating an acid upon irradiation with an actinic ray or radiation,

wherein the component (A) has repeating units of at least one kind selected from the group consisting of vinyl ether repeating units containing groups represented by the following formula (A), vinyl ester repeating units containing groups represented by the following formula (A) and  $\beta$ -alkylacrylic acid repeating units containing groups represented by the following formula (A) :



wherein each of R<sub>1</sub>s individually represents a substituted or unsubstituted straight-chain, branched or cyclic alkyl group, and a plurality of R<sub>1</sub>s may be the same or different.

2. The composition according to claim 1, wherein the vinyl ether repeating units are repeating units represented by the following formula (VA-1), (VA-2) or (VA-3):

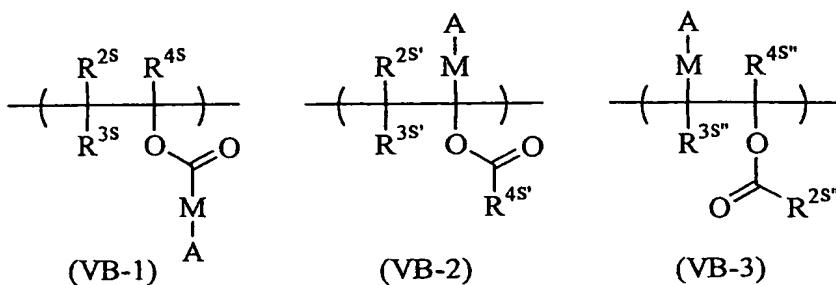


wherein R<sup>2e</sup>, R<sup>3e</sup>, R<sup>2e'</sup>, R<sup>3e'</sup> and R<sup>3e''</sup> independently represent a hydrogen atom, an alkyl group or an alkoxy group, with the provided that both R<sup>2e</sup> and R<sup>3e</sup> do not represent alkoxy groups at the same time, and that both R<sup>2e'</sup> and R<sup>3e'</sup> do not represent alkoxy groups at the same time,

R<sup>4e'</sup> and R<sup>2e''</sup> independently represent an alkyl group, R<sup>4e</sup> and R<sup>4e''</sup> independently represent a hydrogen atom or an alkyl group, M represents a divalent linkage group, and A is a group represented by formula (A),

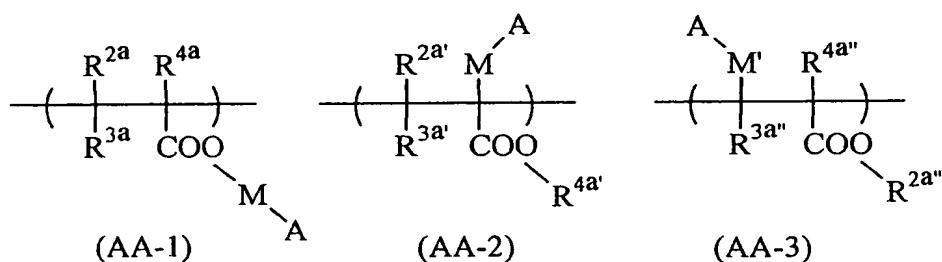
part of M and R<sup>3e</sup>, R<sup>2e</sup> and R<sup>4e</sup>, part of M and R<sup>2e'</sup>, R<sup>3e'</sup> and R<sup>4e'</sup>, part of M and R<sup>4e''</sup>, or R<sup>3e''</sup> and R<sup>2e''</sup> may be combined with each other to form a ring.

3. The composition according to claim 1, wherein the vinyl ester repeating units are repeating units represented by the following formula (VB-1), (VB-2) or (VB-3):



wherein  $R^{2s}$ ,  $R^{3s}$ ,  $R^{4s}$ ,  $R^{2s'}$ ,  $R^{3s'}$ ,  $R^{3s''}$  and  $R^{4s''}$  independently represent a hydrogen atom or an alkyl group,  $R^{4s'}$  and  $R^{2s'}$  independently represent an alkyl group, M represents a divalent linkage group, and A is a group represented by formula (A), part of M and  $R^{3s}$ ,  $R^{2s}$  and  $R^{4s}$ , part of M and  $R^{2s'}$ ,  $R^{3s'}$  and  $R^{4s'}$ , part of M and  $R^{4s''}$ , or  $R^{3s''}$  and  $R^{2s''}$  may be combined with each other to form a ring.

4. The composition according to claim 1, wherein the  $\beta$ -alkylacrylic acid repeating units are repeating units represented by the following formula (AA-1), (AA-2) or (AA-3):



wherein  $R^{2a}$ ,  $R^{2a'}$ ,  $R^{4a'}$  and  $R^{2a''}$  independently represent an alkyl group,  $R^{3a}$ ,  $R^{4a}$ ,  $R^{3a'}$ ,  $R^{3a''}$  and  $R^{4a''}$  independently represent a hydrogen atom or an alkyl group,

M represents a divalent linkage group, M' represents a divalent linkage group attaching to the main chain via a carbon atom or a silicon atom, and A is a group represented by formula (A),

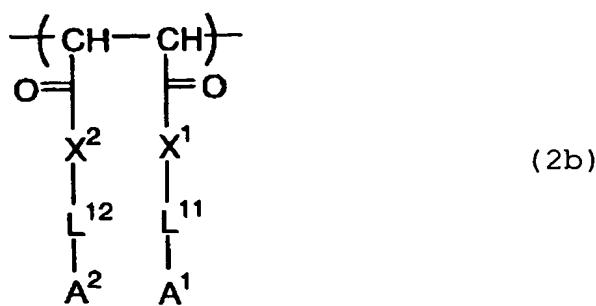
wherein part of M and R<sup>3a</sup>, R<sup>2a</sup> and R<sup>4a</sup>, part of M and R<sup>2a'</sup>, R<sup>3a'</sup> and R<sup>4a'</sup>, part of M' and R<sup>4a''</sup>, or R<sup>3a''</sup> and R<sup>2a''</sup> may be combined with each other to form a ring.

5. The composition according to claim 1, wherein the component (A) further comprises repeating units containing hydrophilic functional groups.

6. The composition according to claim 1, wherein the component (A) further comprises repeating units of at least one kind selected from repeating units represented by the following formula (2a) or repeating units represented by the following formula (2b):



wherein Y<sup>2</sup> represents a hydrogen atom, an alkyl group, a cyano group or a halogen atom, L represents a single bond or a divalent linkage group, and Q represents a group decomposing by an acid and generating a carboxylic acid:



wherein X<sup>1</sup> and X<sup>2</sup> independently represent an oxygen atom, a sulfur atom, -NH- or -NHSO<sub>2</sub>- , L<sup>11</sup> and L<sup>12</sup> independently represent a single bond or a divalent linkage group,

A<sup>1</sup> and A<sup>2</sup> independently represent a hydrogen atom, a cyano group, a hydroxyl group, -COOH, -COOR<sup>5c</sup>, -CO-NH-R<sup>6c</sup>, an unsubstituted or substituted alkyl group, an alkoxy group or -COOQ, R<sup>5c</sup> and R<sup>6c</sup> each represents an unsubstituted or substituted alkyl group, and Q represents a group capable of decomposing by acid and generating a carboxylic acid.

7. The composition according to claim 1, further comprising (C) at least one kind of surfactant selected from fluorine-based and/or silicon-based surfactants or nonionic surfactants.

8. The composition according to claim 1, further comprising (D) an organic basic compound.

9. The composition according to claim 1, wherein the proportion of the repeating units having groups represented

by formula (A) is from 3 to 90 mole % based on the total amount of the resin (A).

10. The composition according to claim 9, wherein the proportion of the repeating units having groups represented by formula (A) is from 5 to 70 mole % based on the total amount of the resin (A).

11. The composition according to claim 10, wherein the proportion of the repeating units having groups represented by formula (A) is from 10 to 60 mole % based on the total amount of the resin (A).

12. The composition according to claim 5, wherein the proportion of the repeating units having hydrophilic functional groups is from 1 to 70 mole % based on the total amount of the resin (A).

13. The composition according to claim 12, wherein the proportion of the repeating units having hydrophilic functional groups is from 5 to 60 mole % based on the total amount of the resin (A).

14. The composition according to claim 13, wherein the proportion of the repeating units having hydrophilic functional

groups is from 10 to 50 mole % based on the total amount of the resin (A).

15. The composition according to claim 6, wherein the proportion of the repeating units of at least one kind selected from repeating units represented by the following formula (2a) or repeating units represented by the following formula (2b) is 5 to 50 mole % based on the total amount of the resin (A).

16. A method for forming a pattern, which comprises forming a resist film comprising the composition described in claim 1, exposing the resist film upon irradiation with the actinic ray or a radiation, and subsequently developing the resist film.